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CASE REPORT

Campylobacter fetus Infection of a Previously Excluded Popliteal Aneurysm

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Introduction

Although some bacteria appear to have a particular affinity for vascular endothelium, especially in the presence of atherosclerosis, infectious aneurysms are uncommon. *Campylobacter fetus* has been recently associated with aortic mycotic aneurysms.[1] We report a case of infection by *Campylobacter fetus* of a previously excluded and bypassed popliteal aneurysm, successfully treated by aneurysm resection and specific antibiotic therapy.

Case Report

A 65-year-old man was admitted with a 6-week history of febrile episodes up to 40 °C, associated with pain and swelling in the right popliteal fossa. The patient had responded to treatment with cefotaxime and erythromycin for 3 weeks, after which fever reappeared. The patient had a history of diabetes mellitus and high blood pressure. Two years prior he had undergone a left above-knee amputation as the result of acute ischaemia secondary to a thrombosed popliteal aneurysm. Two months later an asymptomatic right popliteal aneurysm was excluded and bypassed with reversed saphenous vein.

On examination the popliteal fossa was swollen, indurated and tender. His temperature was 39 °C. Chest X-ray, ECG, and abdominal CT scan were normal. Echocardiogram showed valvular heart disease but no vegetations. The haematocrit and haemoglobin were 25.3% and 8.4 g/dl, respectively with an ESR of

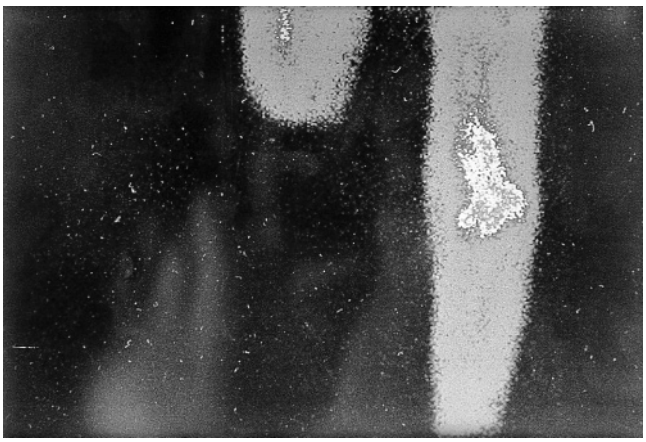

Fig. 1. Technetium 99 m labeled white blood cell scan of the lower-limbs shows accumulation of radionuclide in the popliteal area.

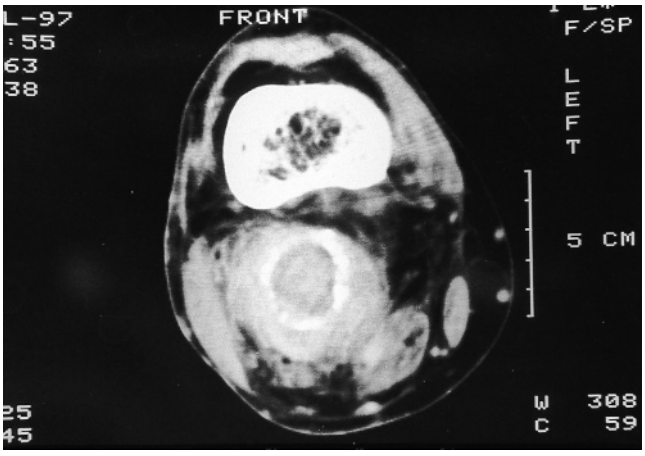

Fig. 2. CT scan of the popliteal fossa, shows a 3.5 cm diameter thrombosed popliteal aneurysm, with inflammatory reaction of the perianeurysmatic tissues.

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133 mm/h. The WBC count was 9000 mm^3, with 80% segmented neutrophils. Hepatic enzymes were normal. Blood cultures grew *Campylobacter fetus*. Technetium 99 m labelled white blood cell nuclear scintigraphy of the lower limbs showed uptake in the right popliteal region. (Fig. 1). A CT scan showed a 3.5 cm thrombosed popliteal aneurysm with significant adjacent inflammatory reaction (Fig. 2). Tobramycine 300 mg/24 h and imipemen-cilastatine 2 g/24 h, was given for 1 week before surgery was undertaken. A right popliteal aneurysm resection through a posterior popliteal approach was carried out. The bacterial cultures from the aneurysmal sac and thrombus were negative. The postoperative course was uneventful, and the patient was discharged after a 4-week course of antibiotics.

Discussion

The long-term morbidity of previously excluded and bypassed popliteal aneurysms is minimal. The excluded aneurysm usually remains silent because the lumen is completely obliterated with thrombus. The most frequent complication of popliteal aneurysm treatment is late bypass failure. The excluded aneurysmal sac can rarely cause symptoms, such as enlargement due to persistent filling through collateral vessels, and compression of the adjacent structures, as well as rupture.[2,3] A mycotic popliteal artery aneurysm of a previously excluded sac has not been previously reported.

Primary mycotic popliteal aneurysms are rare with an estimated incidence of less than 2% of all popliteal aneurysms.[4] Fever, pain and erythema in the popliteal fossa are the principal symptoms in such cases.[1]

The pathogens most commonly implicated in the infection of popliteal aneurysms are Gram-positive cocci like *Staphylococcus* and *Streptococcus*.[4,,5] Gram-negative bacilli like *Proteus, Escherichia coli, Salmonella* and *Campylobacter* species have occasionally been reported.[1,4–7] *Campylobacter fetus* is a curved and motile Gram-negative bacillus that is a common animal pathogen. Human infection with *Campylobacter fetus* is infrequent and occurs mainly in elderly or immunocompromised patients.[8] *Campylobacter fetus* may be responsible for systemic infections such as septicaemia, meningitis, enteritis, arthritis and pneumonia, and it seems to have a predilection for the vascular endothelium.[9] In recent years this organism has been increasingly associated with mycotic aortic aneurysms and endocarditis[8,10–14] but we have only found one case involving a popliteal artery aneurysm.[1]

The pathogenesis vascular infection seems to be secondary to haematogenous spread. In our patient, *Campylobacter fetus* bacteriaemia without an apparent primary focus, was associated with late infection of the excluded popliteal aneurysm. There was an initial response to a 3-week course of antibiotics but after antibiotic therapy was discontinued, fever recurred along with inflammatory signs in the right popliteal fossa. Infected popliteal aneurysms should be treated by excision of all the infected tissue, resection of the aneurysm, and specific antibiotic therapy. When bypass surgery is necessary in order to avoid limb loss, revascularisation with autologous material, preferentially reversed saphenous vein graft, should be attempted.[5,7] In this case, the aneurysm was resected while the saphenous bypass that had been previously performed maintained limb perfusion. The correct antibiotic regimen should be based on *in vitro* sensitivity studies.[15] Duration of the antibiotic therapy is not well defined, but a 4-week course is recommended.[1,15]

Although the natural history of previously excluded and bypassed popliteal aneurysms is usually harmless, we would recommend continued follow-up for these patients.[2]

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